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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,476	07/27/2001	Tinku Acharya	42390P11959	1096

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EXAMINER

SHERALI, ISHRAT I

ART UNIT PAPER NUMBER

2621

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/917,476	ACHARYA, TINKU	
	Examiner	Art Unit	
	Sherali Ishrat	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10/05/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments/Amendment

1. This action is in response to applicant's arguments filed on 10/05/2004.

Based on the applicant's arguments rejection under 35 USC § 112 is withdrawn.

Applicant's arguments are fully considered however they are not persuasive with respect to art rejection. See the remarks section for detail discussion.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Reisch et al. (US 5,168,375).

Regarding claim 1, 8 and 15, Reisch discloses upscaling a decompressed image (See Reisch, figure 1 [blocks 64, 106 and 108] Reisch in figure 1, blocks 64, 106 and 108 shows, upsclaing a decompressed image by sharpening and interpolation) comprising:

multiplying frequency domain coefficients for the decompressed image by a scale factor (See Reisch, Figure 1, shows sharpening and interpolating decompressed image col. 17, lines 37-47, "In the sharpening unit" and "multiplying in the frequency domain DCT coefficients with filter kernel", in the system of Reisch filter kernel

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corresponds to the scale factor because by multiplying DCT coefficients with filter kernel Reisch is upscaling the resolution [sharpening] of decompressed image as shown in figure 1 and col. 17, lines 37-40, Reisch shows filtering is accomplished to obtain sharpened image [upscaled image] and in figure 1 [blocks 64, 106 and 108] Reisch shows sharpening and interpolation decompressed image)

to achieved a desired amount of image upscaling (See Reisch, figure 1 [blocks 64, 106 and 108] , col. 17, lines 37-40, Reisch shows filtering is accomplished on the image i.e to upscale the resolution [sharpening] of decompressed image for desired amount); and

padding the frequency domain coefficients with sufficient zeros to provide the desired scaling (See Reisch, figure 3, blocks 128 and 134, col. 17, lines 17-20, Reisch shows inserting additional rows and columns to the DCT array of coefficient and padding the additional rows and columns with zeros for desired scaling of the image).

Regarding claim 2, 9 and 16, Reisch discloses frequency coefficients comprise DCT coefficients (See Reisch, col. 17, 16-17, frequency corresponds to DCT coefficients).

Regarding claim 3, 10 and 17, Reisch discloses inverse transforming the scale and padded transform coefficients to provide a spatial domain image (See Reisch, figure 3, blocks 128 I and 134, Reisch shows inverse transform of DCT coefficients and padding additional rows of DCT with zeros).

Regarding claims 4 and 11, Reisch discloses scaling comprise integer scaling (See Resich, figure 1 and figure 3, Reisch upscaling of DCT coefficients of resolution

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[sharpening] and insertion of additional rows and columns to DCT array can be integer scaling)

Regarding claims 5, 12 and 18, Reisch transforming the scaled padded frequency domain coefficients to provide a spatial domain image (See Reisch, figure 3, blocks 128 I and 134, Reisch shows transforming the scaled padded frequency domain coefficients to provide a spatial domain image [block 134]).

Regarding claims 6, 13 and 19, Reisch disclose decompressed image was decompressed from block based specification (See Reisch, figure 3, blocks 128F, 128I and 134, Reisch is obtaining decompressed image [block 134] from DCT coefficient [block 128 I] and DCT is based on block based specification).

Regarding claims 7, 14 and 20, Reisch discloses block based specification compliant compressed image comprise at least one of JPEG specification compliant (See Reisch, figure 3, col. 2, lines 55-60, Reisch shows JPEG compliant DCT circuitry).

Remarks

4. Applicant's arguments filed on 10/05/2004, Applicant argued the following:

a. Reisch does not discloses upscaling decompressed image.

Examiner disagree with Applicant's interpretation of Reisch reference. In figure 1, Reisch in blocks 64, 106 and 108, clearly shows sharpening and intepolation for the decompressed image. Sharpening and interpolation of decompressed image corresponds to upscaling of the decompressed image.

b. Reisch does not show multiplying in the frequency domain DCT coefficients.

Reisch in col. 17, lines 37-47, states "In the sharpening unit filtering is accomplished by use of 5 by 5 spatial filter kernel. In accordance with the invention convolution is accomplished by multiplication in the frequency domain employing the DCT. This statement of Reisch clearly shows that Reisch is multiplying DCT coefficients with filter kernel.

c. Reisch does not show multiplying the frequency coefficients for the decompressed image to achieve desired amount of upscaling.

Reisch in figure 1 shows in blocks 64, 106 and 108, clearly shows sharpening and interpolation for the decompressed image and col. 17, lines 37-47, Reisch states "In the sharpening unit filtering is accomplished by use of 5 by 5 spatial filter kernel. In accordance with the invention convolution is accomplished by multiplication in the frequency domain employing the DCT. Sharpening of DCT coefficients is upscaling in the system of Reisch and Reisch states in col. 17, lines 17-20, "inserting additional rows and columns to the DCT array of coefficient and padding the additional rows and columns with zeros for desired scaling of the image .

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 571-272-7398. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Au Amelia can be reached on 571-272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ishrat Sherali

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Patent Examiner

Group Art Unit 2621

April 13, 2005



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